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Sagnac interference in Carbon nanotube loops GIL REFAEL, JIN-SEONG HEO, MARC BOCKRATH, California Institute of Technology — Some of the most pronounced manifestations of electron interference effects occur in carbon-nanotubes. When a nanotube is made to form a loop, a new large-period mode of interference appears in the conductance measured as a function of gate-voltage or source-drain voltage. The periodicity of the fringes is determined by the velocity detuning between right- and left-moving electrons, thus the nanotube loop forms a Sagnac interferometer which precisely measures this detuning. In our work we explore this effect in strongly interacting Carbon nanotubes, and carefully consider the response to the gate and source-drain voltages.

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